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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,060	06/22/2005	Kenji Kondo	5077-246/NP	1318

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EXAMINER	
VANCHY JR, MICHAEL J	

ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,060	KONDO ET AL.	
	Examiner	Art Unit	
	Michael Vanchy Jr.	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-8,11 and 12* is/are rejected.

7)☒ Claim(s) *2, 9, and 10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 July 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08/30/2006 and06/22/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Oda, 6,542,624 B1.

Re claim 1, a living eye judging method comprising: a first step of obtaining an image captured by shooting a subject with illumination coaxial with an optical axis of a camera (Oda, Fig. 1 and col. 10, lines 43-46); and a second step of judging whether an eye included in the image is a living eye or not based on luminance in a pupil region of the eye in the image (Oda, col. 8, lines 40-43 and lines 49-50).

Re claim 3, the method of claim 1, wherein in the first step, a plurality of images sequential in time are obtained, and in the second step, whether the eye is a living eye or not is judged based on time variation in a predetermined index for luminance in the

pupil region obtained from the plurality of images (Oda, col. 10, line 66 to col. 11, line 5 and col. 11 lines 24-29).

Re claim 11, a living eye judging device comprising: a camera for shooting a subject; an illumination section for illuminating the subject coaxially with an optical axis of the camera (Oda, Fig. 1 and col. 10, lines 43-46); and a living eye judgment section that receives an image captured by the camera with illumination by the illumination section and performs judgment as to whether an eye included in the image is a living eye or not based on luminance in a pupil region of the eye in the image (Oda, col. 8, lines 40-43 and lines 49-50).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 4, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda, 6,542,624 B1 and further in view of Proniewicz et al., 6,853,854 B1.

Where as both Oda and Proniewicz et al. teach a system which takes information from a biological entity, such as an eye of an individual, Oda is silent on using certain predetermined indexes such as "average value, total sum" and normalizing stated total sum. However, Proniewicz et al. does:

Re claim 4, the method of claim 3, wherein the predetermined index is an average value of luminance in the pupil region (Proniewicz et al., col. 9, line 66 to col. 10, line 8).

Re claim 6, the method of claim 3, wherein the predetermined index is a total sum of luminance values of each pixel in the pupil region (Proniewicz et al., col. 9 , line 66 to col. 10, line 8).

Re claim 7, the method of claim 6, wherein the total sum of the luminance values is normalized by an area of the iris region (Proniewicz et al., col. 9 , line 66 to col. 10, line 8).

Proniewicz et al., states in order to equalize the iris of the eye using the brightness (luminance) around the pupil as a base-line to more accurately locate the pupil of the eye (Proniewicz et al., col. 3, lines 7-11). Therefore, taking the combined teachings of Oda and Proniewicz et al. as a whole, it would be clear to one of ordinary

skill in the art to modify Oda to include the stated indexes to more accurately locate the pupil of the eye.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oda, 6,542,624 B1 as applied to claim 3 above, and further in view of Cleveland et al., 5,231,674.

Where as both Oda and Cleveland et al. teach a system, which takes information from a biological entity, such as an eye of an individual, Oda is silent on using certain predetermined indexes such as "ratio of luminance of the pupil to iris region." However, Cleveland et al. does:

Re claim 5, the method of claim 3, wherein the predetermined index is a ratio of luminance of the pupil region to the iris region (Cleveland et al., col. 3, lines 17-30).

Cleveland et al. states that with improved contrast ration between the pupil and the iris region one can locate the pupil more reliably and accurately. Therefore, taking the combined teachings of Oda and Cleveland et al. as a whole, it would be clear to one of ordinary skill in the art to modify Oda to include taking the ratio of luminance of the pupil to iris region for more reliable and accurate data of the location of the pupil..

7. Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda, 6,542,624 B1, and further in view of Tomono et al., 5,016,282.

Where as both Oda and Tomono et al., teach extracting characteristic features of an individual's eye using a camera and illumination, Oda is silent on using a second

illumination having an optical axis different from the optical axis of the camera. However Tomono et al. does:

Re claim 8, an living eye judging method comprising: a first step of obtaining a first image captured by shooting a subject with illumination coaxial with an optical axis of a camera and a second image captured by shooting the subject with illumination having an optical axis different from the optical axis of the camera (Tomono et al., Fig. 7 and Abstract); and a second step of judging whether an eye included in the first and second images is a living eye or not based on luminance in pupil regions of the eye in the first and second images (Oda, col. 10, line 66 to col. 11, line 5 and col. 11 lines 24-29).

Therefore, taking the combined teachings of Oda and Tomono et al., as a whole it would be clear to one of ordinary skill in the art to add a second illumination that is not coaxial with the camera, and creating a second image with this illumination to determine if the eye is living.

Re claim 12, a living eye judging device comprising: a camera for shooting a subject; a first illumination section for illuminating the subject coaxially with an optical axis of the camera; a second illumination section for illuminating the subject on an optical axis different from the optical axis of the camera (Tomono et al., Fig. 7 and Abstract); and a living eye judgment section that receives a first image captured by the camera with illumination by the first illumination section and a second image captured by the camera with illumination by the second illumination section and performs judgment as to whether an eye included in the first and second images is a living eye or

not based on luminance in pupil regions of the eye in the first and second images (Oda, col. 10, line 66 to col. 11, line 5 and col. 11 lines 24-29).

Allowable Subject Matter

8. Claims 2, 9, and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Re claim 2, the method of claim 1, wherein in the second step, the eye is judged as a living eye when a difference in luminance between in the pupil region and in an iris region or a luminance ratio of the pupil region to the iris region is larger than a threshold value.

Re claim 9, the method of claim 8, wherein the second step includes the steps of: obtaining a first luminance difference, which is a difference in luminance between the pupil region and an iris region in the first image, and a second difference, which is a difference in luminance between the pupil region and an iris region in the second image; and judging the eye as a living eye when an absolute value of a difference between the first luminance difference and the second luminance difference is larger than a predetermined threshold value.

Re claim 10, the method of claim 8, wherein the second step includes the steps of: obtaining a first luminance ratio, which is a ratio in luminance of the pupil region to an iris region in the first image, and a second luminance ratio, which is a ratio in luminance of the pupil region to an iris region in the second image; and judging the eye as a living eye when a ratio of the first luminance ratio to the second luminance ratio is larger than a predetermined threshold value.

Examiner's Note

The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Vanchy Jr. whose telephone number is (571) 270-1193. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on (571) 272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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